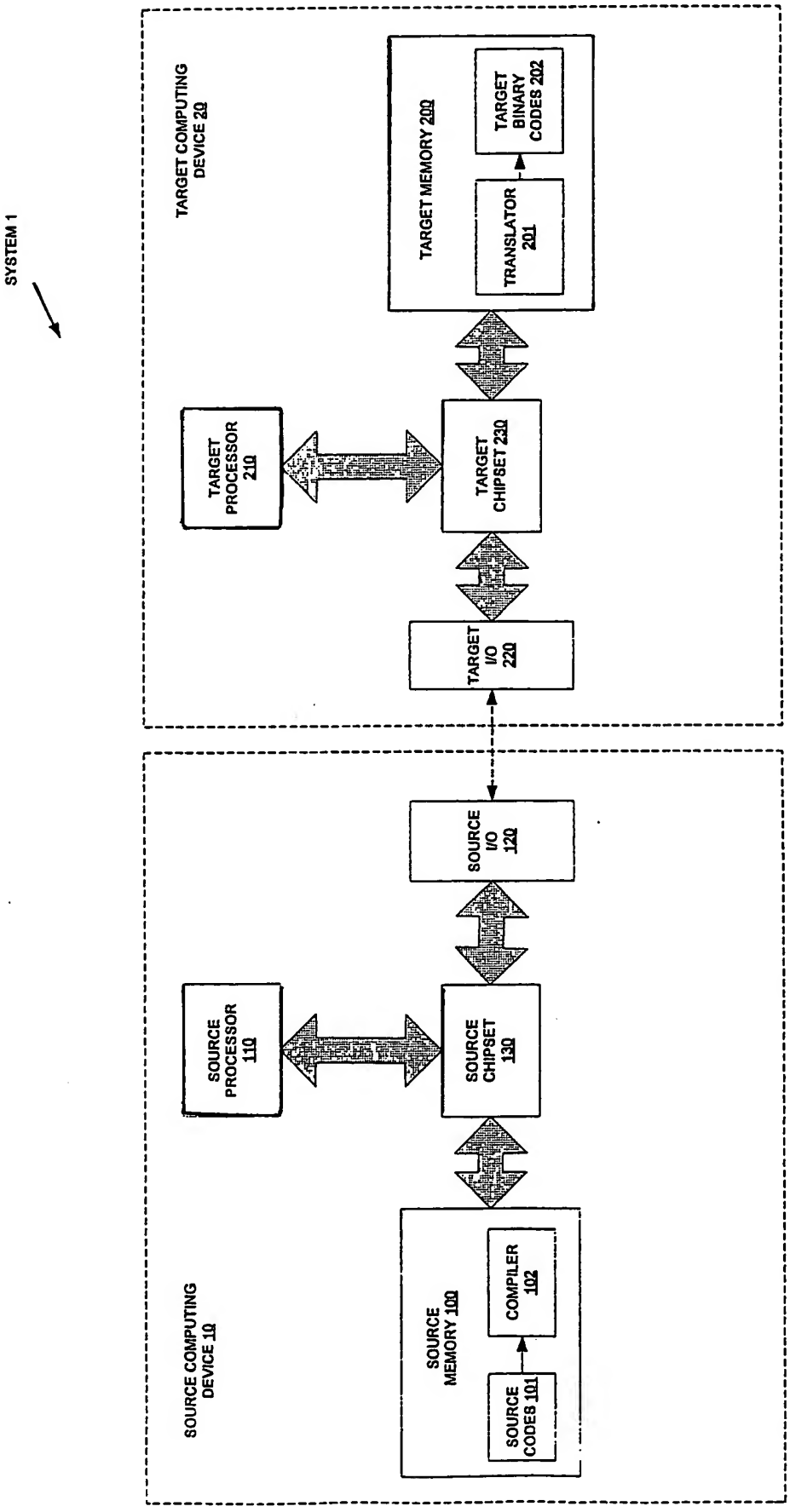

SYSTEM 1
TARGET COMPUTING DEVICE 20
TARGET MEMORY 200
TARGET BINARY CODES 202
TRANSLATOR 201
TARGET PROCESSOR 210
TARGET CHIPSET 230
TARGET I/O 220
SOURCE I/O 120
SOURCE PROCESSOR 110
SOURCE CHIPSET 130
SOURCE MEMORY 100
COMPILER 102
SOURCE CODES 101
SOURCE COMPUTING DEVICE 10

FIG. 1

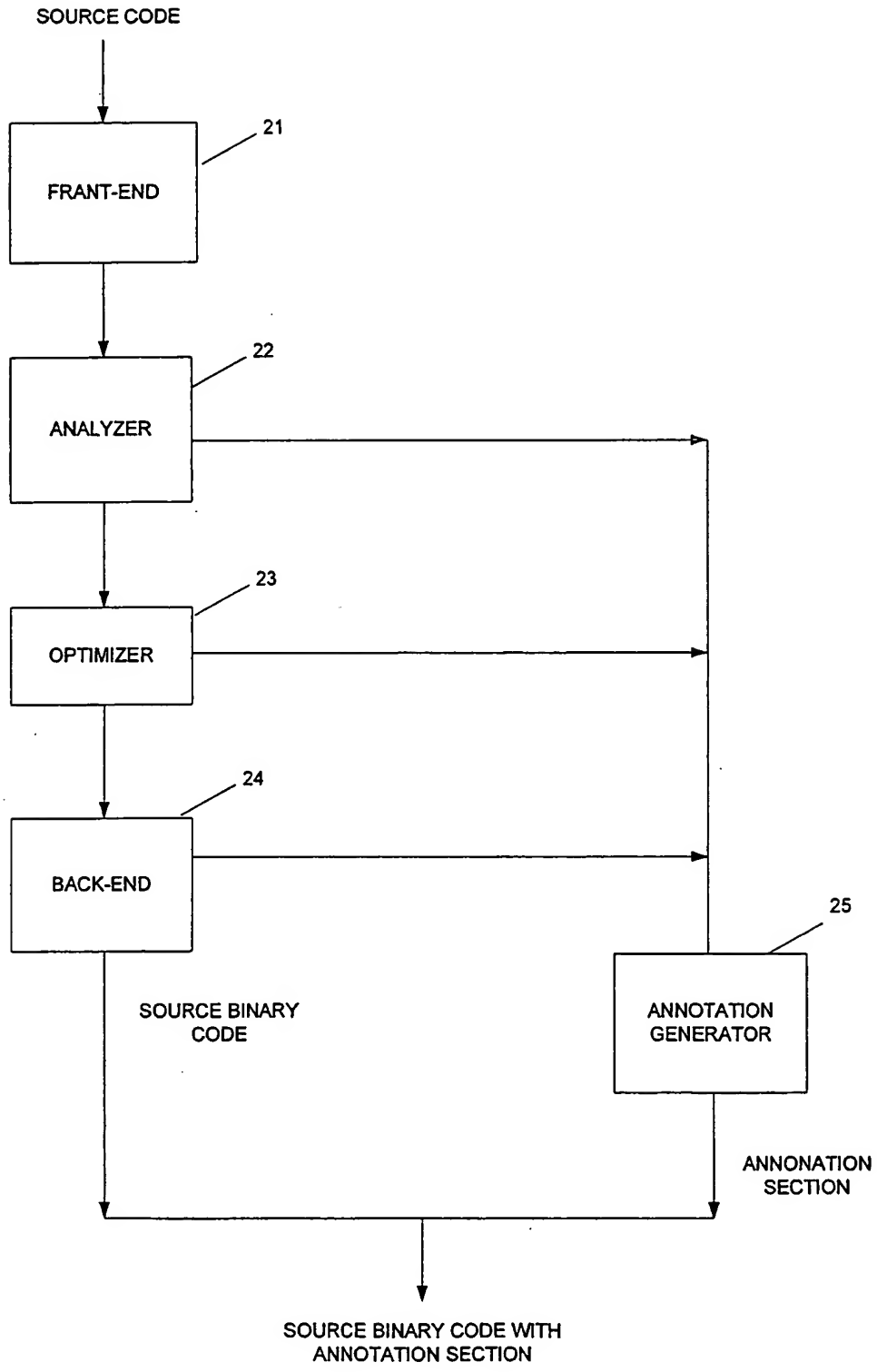
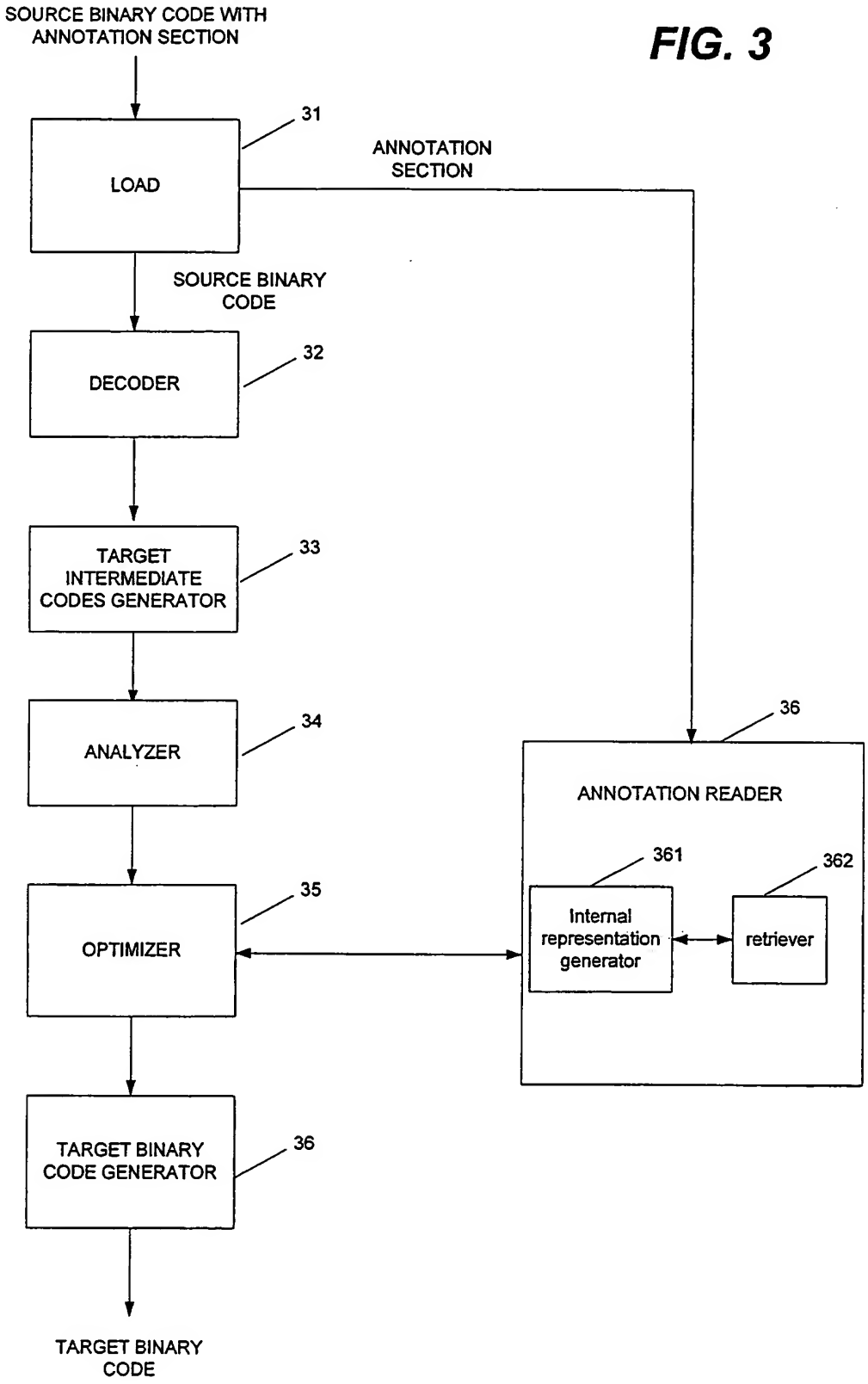

SOURCE CODE
21
FRANT-END
22
ANALYZER
23
OPTIMIZER
24
BACK-END
25
ANNOTATION GENERATOR
SOURCE BINARY CODE
ANNONATION SECTION
SOURCE BINARY CODE WITH ANNOTATION SECTION

FIG. 2

FIG. 3


SOURCE BINARY CODE WITH ANNOTATION SECTION
31
LOAD
ANNOTATION SECTION
SOURCE BINARY CODE
32
DECODER
33
TARGET INTERMEDIATE CODES GENERATOR
34
ANALYZER
35
OPTIMIZER
36
ANNOTATION READER
361
Internal representation generator
362
retriever
36
TARGET BINARY CODE GENERATOR
TARGET BINARY CODE

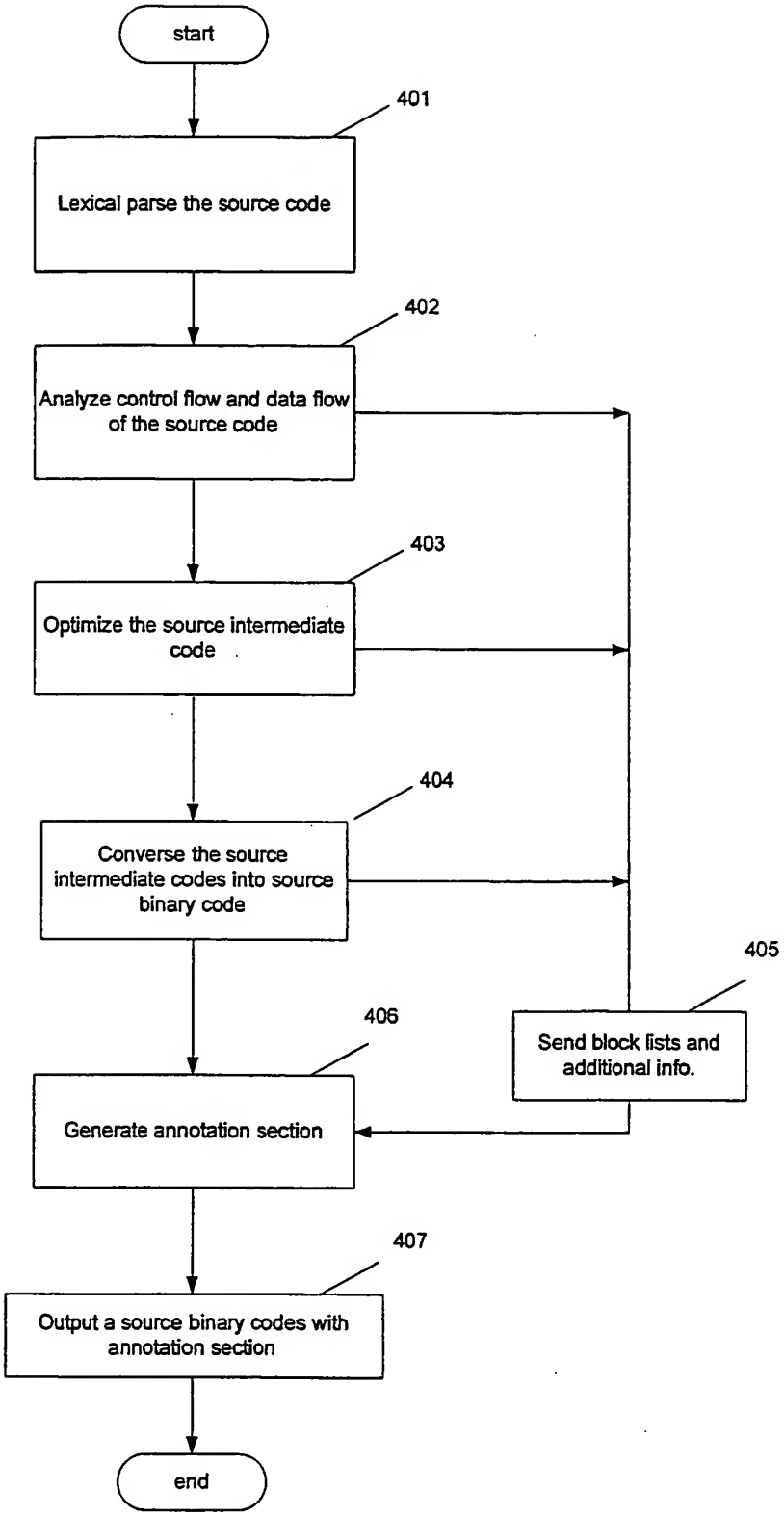
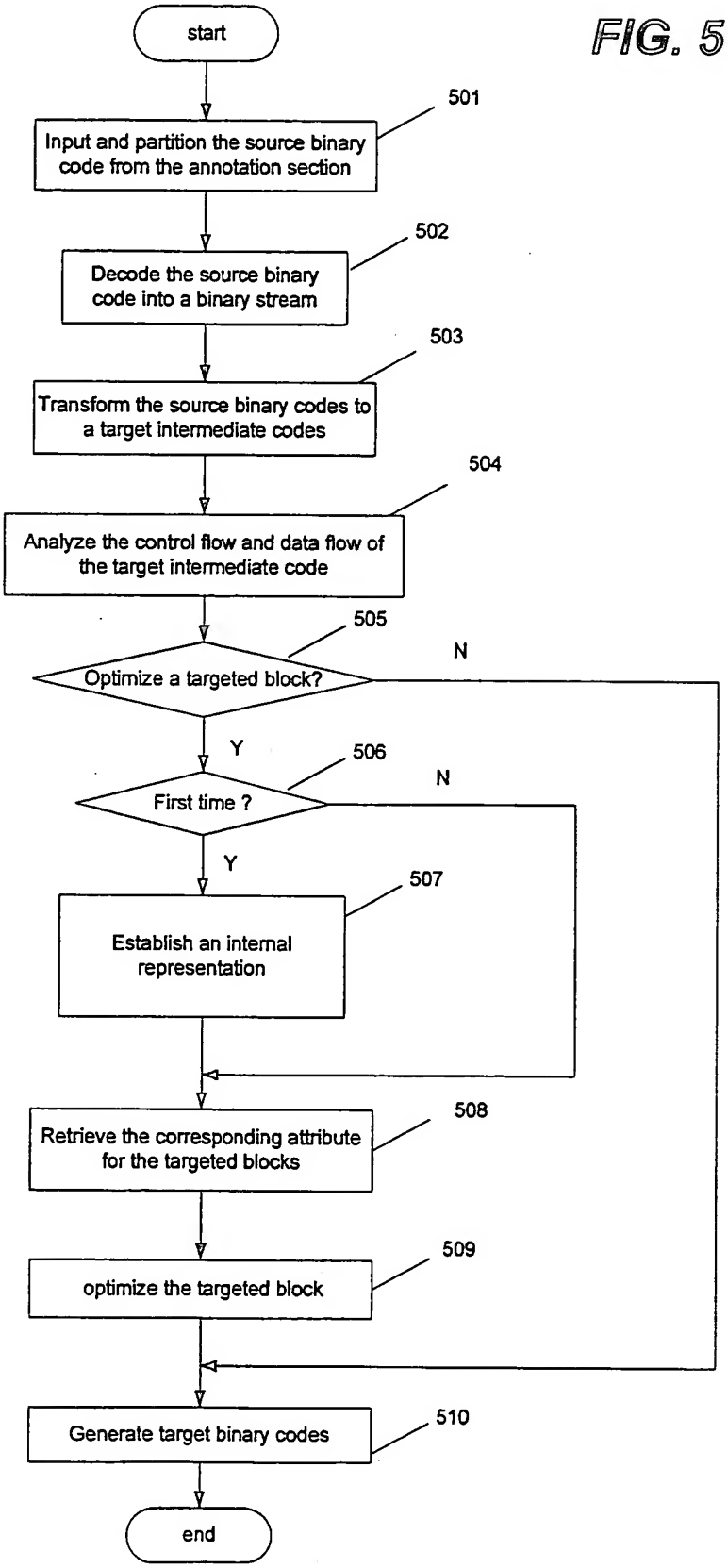

start
401
Lexical parse the source code
402
Analyze control flow and data flow of the source code
403
Optimize the source intermediate code
404
Converse the source intermediate codes into source binary code
405
Send block lists and additional info.
406
Generate annotation section
407
Output a source binary codes with annotation section
end

FIG. 4

FIG. 5


start
501
Input and partition the source binary code from the annotation section
502
Decode the source binary code into a binary stream
503
Transform the source binary codes to a target intermediate codes
504
Analyze the control flow and data flow of the target intermediate code
505
Optimize a targeted block?
N
Y
506
First time ?
N
Y
507
Establish an internal representation
508
Retrieve the corresponding attribute for the targeted blocks
509
optimize the targeted block
510
Generate target binary codes
end

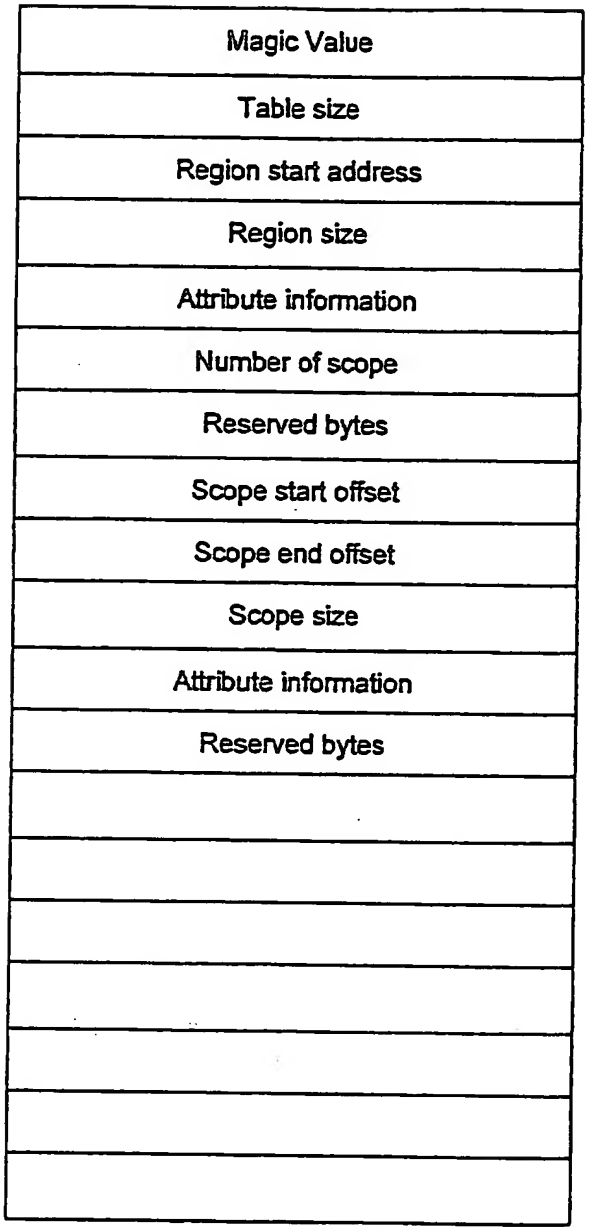

Magic Value
Table size
Region start address
Region size
Attribute information
Number of scope
Reserved bytes
Scope start offset
Scope end offset
Scope size
Attribute information
Reserved bytes

FIG. 6